

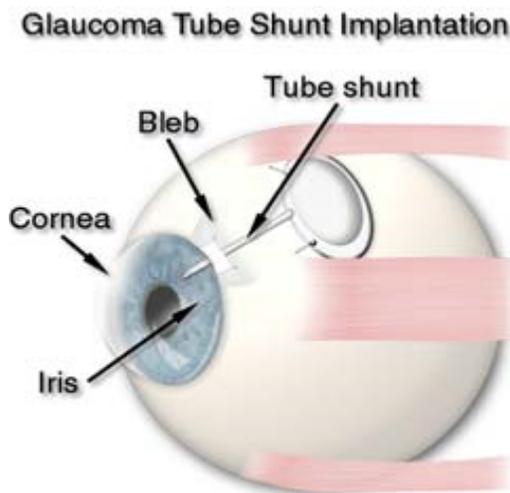
Anne Fiona Spencer

DM FRCS(Glasg) FRCOphth



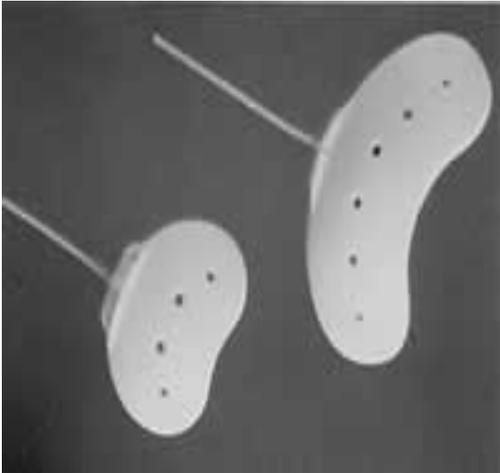
Glaucoma drainage tube surgery

You may have been told, that you require an operation to control the pressure within your eye. This operation involves inserting a glaucoma drainage tube or device into the eye. This operation is recommended for patients whose glaucoma continues to progress despite using eye drops and/or having had laser treatment and/or where conventional glaucoma surgery has failed. It is also recommended in some situations, such as in Congenital glaucoma, glaucoma acquired after trauma or inflammation in the eye, or due to new blood vessels in the eye or in aphakic eyes where the natural lens of the eye has been removed, where the risks of conventional surgery failing are much higher and so your doctor may therefore suggest a drainage tube operation.



The goal of drainage tube surgery is to help lower and control your eye pressure. This eye pressure is known as intra-ocular pressure (IOP). If your intra-ocular pressure remains high, then further irreversible loss of vision from glaucoma may occur. This operation will not improve your vision or cure glaucoma, but aims to prevent or slow down further visual loss from glaucoma damage.

What is a glaucoma drainage tube operation?



This is where a drainage tube is inserted into the eye to create an alternative drainage channel, to help aqueous fluid (natural fluid of the eye) drain from your eye. This operation creates a bypass for the blocked natural drain (trabecular meshwork) of your eye. Your eye pressure is reduced because fluid can now drain with relative ease through the newly created drainage channel.

There are a small number of plastic drainage tube devices that can be used some with valves and some without, these are usually made of silicone or polypropylene materials.

How is a glaucoma drainage tube operation performed?

The plate of the device is placed on the outside of the eye on the sclera, the white of the eye, (beneath the conjunctiva, a thin transparent layer). A small tube then is inserted from this into the front of the eye to provide a passageway for the movement of fluid out of the eye to the plate where it can drain away in blood vessels back into the body. The tube is then covered by a patch graft to prevent it from eroding through the outer conjunctival layer and infection getting into the eye. The graft is donor tissue either sclera (white of the eye) or cornea (the clear window of the eye).

As a routine the drainage of the tube is initially limited until some scarring occurs around the plate. This prevents initial over-drainage

of fluid and problems from this. The tube is tied with a dissolving stitch which gives way after a few weeks, additionally a thread is left partly blocking the tube that can be removed at a later date if further fluid drainage is needed. The surgery is usually carried out under a general anaesthetic, this will be discussed with you prior to your admission to hospital.

How successful glaucoma drainage tube surgery at lowering intra-ocular pressure?

Audits and studies on the success of drainage tube surgery show it is very effective in lowering pressure. In the tube versus trabeculectomy study only 4% had failed at 1 year and 15% at 3 years although some patients required additional eye drops to lower the pressure to the desired level. A blockage of the tube in the eye or too much scarring around the drainage plate can limit the success of the operation.

Are there any risks associated with drainage tube surgery?

As with any surgery, there is the potential for complications or problems to arise. Complications can occur during surgery, shortly after surgery or many months after surgery.

Complications that can occur:

The most serious problem that can occur is bleeding inside the eye. This can lead to loss of vision and even blindness but occurs in less than 1 in 1000 patients. An infection inside the eye can be very serious and also cause loss of vision or blindness. This also happens in less than 1 in 1000 patients.

After the operation the eye pressure may be too high or too low. Initially it is likely that glaucoma medications will need to be taken until drainage from the tube occurs. It may require additional treatment or adjustments in the out patient clinic or sometimes further surgery. There is a small risk of the pressure going too low when the tube does drain and this causing a reduction in vision.

Inflammation inside the eye can occur and can be treated. Swelling in the retina can affect your vision but this can usually be treated. Some patients are aware of the drainage plate under their upper eyelid or that there is slight drooping of the eyelid but this usually settles down. Rarely the plate and drainage around it can affect the movement of the eye and cause double vision. As your eye settles down and heals you may need a change of glasses, to get your best vision. About

10% of patients' notice that their vision is reduced by one line on the eye chart a year after the operation, as cataract formation may be increased.

The use of antimetabolites (anti-scarring drugs)

Antimetabolites are medications that prevent scar tissue forming. If your doctor is concerned that excess scarring may occur and limit the success of your operation then the use of these medications can enhance success. The most commonly used antimetabolite is Mitomycin C (MMC). This can be used at the time of surgery.

The use of donor tissue

Donated sclera or corneal can be used for the patch graft to cover the tube. A blood sample is taken from the donor for testing to detect the presence of infectious diseases like HIV and Hepatitis B and C. HIV, Hepatitis B and C have not been reported as having been transmitted in this way since screening was commenced.

Before your operation

You should continue any eye drops and tablets for your glaucoma as prescribed, until the time of your surgery, unless directed otherwise specifically. If you take any blood thinning medicines e.g. warfarin please discuss this with me in clinic. On your admission please bring with you an up to date list of your current medications and a brief summary of your medical history, available from your GP if you are unsure. Any investigations e.g. blood tests or ecg will also be undertaken as appropriate. If you are due to have a general anaesthetic you will receive instructions from the hospital about starving prior to the operation, though this is usually for 6 hours beforehand.

After your operation

Immediately after your operation your eye will be covered by a protective plastic shield. Eye drops are not usually required in your operated eye until the day after surgery. Any eye drops that you use in your other eye must be continued as normal. The morning after your operation the protective eye shield will be removed. Your eye will be cleaned and examined and eye drops commenced. The eye drops

you will need to use in your operated eye will be **additional to or different from** the drops that you used prior to your operation. Drops will need to be used for approximately 3 months after your operation. Each time you attend the out patient clinic any changes to your eye drops will be discussed with you. If you are running out of the drops you must obtain a repeat prescription for them from your own general practitioner (GP).

Post operative visits

Your intra-ocular pressure can fluctuate widely in the first few weeks after surgery. During the first few weeks you will need to attend the out patients clinic frequently for close monitoring initially on a weekly basis, occasionally more frequently. It is very important that you attend all your clinic appointments and use your eye drops as prescribed.

Activities after drainage tube surgery

Following surgery you are able to read and watch television as normal as these activities will not harm your eye. It is however, important to avoid strenuous activity during the first few weeks after surgery. The following table is a general guide but may be altered depending upon how each individual's eye recovers.

Activity	Avoid for
Hair washing	No need to avoid but a back wash advised to avoid getting shampoo into eye. May be easier to have someone else wash your hair for you.
Showering and bathing	No need to avoid but don't allow soapy / dirty water to go into eye.
Sleeping	Try to sleep on your un-operated side. Tape the plastic eye shield provided over your eye every night for 2 weeks to avoid inadvertently rubbing your eye whilst asleep.
Walking	No restrictions

Wearing glasses	No restrictions. Avoid buying new glasses for 2-3 months after surgery as your glasses prescription can change during this time as your eye heals.
Wearing sunglasses	Wear for comfort if your eye feels sensitive to light and wear sunglasses in bright sunlight with UV protection.
Wearing contact lenses	In the immediate post operative period should not be worn but may be worn in longer term after discussion with your consultant team
Driving	This is dependant on your vision in both eyes and you will be advised at clinic.
Flying	No restrictions
Going away on holiday	Discuss with your doctor/nurse as it is very important to attend your follow up appointments.
Wearing eye make up	1 month then use new make up. Never share eye make up with someone else.
Household chores e.g. cleaning, ironing, hoovering	1 – 2 weeks but this depends upon your intra-ocular pressure
Sexual activity	1 -2 weeks
Gym workout	3 months
Playing sports e.g. football, tennis, golf, squash, rugby	3 months
Running / jogging	3 months
Swimming	Avoid until all your stitches have been removed, approximately 3 months then after that wear goggles.

Returning to work

The length of time you will need off work depends upon a number of factors such as the nature of your job, your vision and the intra-ocular pressure in your operated eye. Most people need 1 – 2 weeks off after surgery. If your job involves heavy manual work or you work in a particularly dusty/dirty environment you may require longer off. This

can be discussed at any clinic visit. You may need to make your employer aware of your need to attend for frequent follow up appointments after surgery. A self-certifying sick note is required for the first 7 days of absence and is available from your employer or GP, not from the hospital. After the first 7 days a medical sick note is required and is available from your GP or hospital doctor.

Contact information

The information in this leaflet is intended as a guide only, as each patients experience will be different. If you require any further information or are concerned about your eye following surgery, please contact my secretary at the Alexandra hospital, the telephone number is 0161 495 6815.

If you are unable to speak to my secretary, please ring my secretary at the Eye Hospital who can contact me. The telephone number is 0161 276 6949. The nurses on the Private Patient Unit may also be able to advise you 0161 276 5600. If you are unable to contact my secretaries or me at the Eye Hospital and are concerned then the Emergency Eye centre on 0161 276 5597 is open everyday between 8.00 am and 8.30 pm.

Miss Anne Fiona Spencer
Consultant Ophthalmic Surgeon
Specialist in Glaucoma and Cataract